

WHAT IS CLAIMED IS:

1. A clutch connection/disconnection detection system for a single-cylinder engine, for detecting the connection/disconnection of a clutch intermediately provided between a crankshaft of said single-cylinder engine and a power transmission means for transmitting the output of said crankshaft comprising:

a rotation variation coefficient detection means for detecting the rotation variation coefficient of said crankshaft; and

a decision means for deciding the connection/disconnection of said clutch by comparing said rotation variation coefficient detected by said rotation variation coefficient detection means with a preliminarily determined threshold.

2. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 1, wherein said threshold is preliminarily set according to engine speed.

3. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 1, and further including a rotating disk operatively connected to the crankshaft for rotation therewith and a pulser displaced a predetermined distance relative to the rotating disk for detecting the rotation thereof.

4. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 3, wherein a plurality of projections extend from the rotating disk and said pulser detects each projection during rotation for outputting a pulse signal for each time a projection is detected.

5. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 4, wherein nine projections extend from the rotating disk and wherein pulse signals for stages 0 to 17 are assigned during two revolutions of the crankshaft.

6. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 5, wherein stages 4 to 6 correspond to a combustion stroke of the engine.

7. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 5, wherein stages 7 to 12 correspond to an exhaust stroke of the engine.

8. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 5, wherein stages 13 to 15 correspond to an intake stroke of the engine.

9. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 5, wherein stages 16 to 3 correspond to a compression

stroke of the engine.

10. The clutch connection/disconnection detection system for a single-cylinder engine as set forth in claim 1, wherein the rotation variation coefficient is calculated as follows:

$$\text{TSRAT} = (\text{TSA4} - \text{TSH4}) / \text{ME4U}$$

where: TSRAT is the rotation variation coefficient,

TSA4 is the time of a compression stroke of the engine,

TSH4 is the time of the exhaust stroke of the engine, and

ME4U is the time for two revolutions of the crankshaft.

11. A method for detecting clutch connection/disconnection for a single-cylinder engine, for detecting the connection/disconnection of a clutch intermediately provided between a crankshaft of said single-cylinder engine and a power transmission means for transmitting the output of said crankshaft comprising the following steps:

detecting a rotation variation coefficient of said crankshaft; and

deciding the connection/disconnection of said clutch by comparing said rotation variation coefficient detected by said rotation variation coefficient detection means with a preliminarily determined threshold.

12. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 11, wherein said threshold is preliminarily set according to engine speed.

13. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 11, wherein the detecting step includes a rotating disk operatively connected to the crankshaft for rotation therewith and a pulser displaced a predetermined distance relative to the rotating disk for detecting the rotation thereof.

14. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 13, wherein a plurality of projections extend from the rotating disk and said pulser detects each projection during rotation for outputting a pulse signal for each time a projection is detected.

15. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 14, wherein nine projections extend from the rotating disk and wherein pulse signals for stages 0 to 17 are assigned during two revolutions of the crankshaft.

16. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 15, wherein stages 4 to 6 correspond to a combustion stroke of the engine.

17. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 15, wherein stages 7 to 12 correspond to an exhaust stroke of the engine.

18. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 15, wherein stages 13 to 15 correspond to an intake stroke of the engine.

19. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 15, wherein stages 16 to 3 correspond to a compression stroke of the engine.

20. The method for detecting clutch connection/disconnection for a single-cylinder engine as set forth in claim 11, wherein the rotation variation coefficient is calculated as follows:

$$\text{TSRAT} = (\text{TSA4} - \text{TSH4}) / \text{ME4U}$$

where: TSRAT is the rotation variation coefficient,

TSA4 is the time of a compression stroke of the engine,

TSH4 is the time of the exhaust stroke of the engine, and

ME4U is the time for two revolutions of the crankshaft.